I. Amendments to the Specification

Please replace prior paragraph [0000.1] with the following amended paragraph:

[0000.1] This application is a divisional application of prior U.S. application number 09/861,250, filed May 18, 2001 (now abandoned) and claims domestic priority thereto under 35 U.S.C. §§ 120, 121.

Please replace prior paragraph [0024] with the following amended paragraph:

[0024] The present invention requires the use of suitable low frequency induction heaters. As used herein and based on existing component geometries (barrel, screw, feedstock), the term low frequency induction heaters denotes induction heaters operating at less than 1000 Hz. One preferred frequency range is therefore less than 1000 Hz and another preferred range is greater than 0 and up to 400 Hz. In one construction, the preferred frequency was about 60 Hz. The precise frequency will be dependant upon the specific component criteria and material properties of the machine within which it is employed.

Please replace prior paragraph [0035] with the following amended paragraph:

[0035] Figure 7 is a chart which shows a ~~comparative~~ comparison of the benefits of low frequency inductive heating over ceramic band heaters with barrel and liner stresses during preheating.

Please replace prior paragraph [0040] with the following amended paragraph:

[0040] The apparatus 10, which is generally shown in Figure 1, includes a barrel 12 coupled to ~~a mold~~ mold halves 17, 19. As more fully discussed below, the barrel 12 includes a liner 13, a cold section or inlet section 14, and a hot section or shot section 15 and an outlet nozzle 30. An inlet 18 located in the cold section 14 and an outlet 20 located in the hot section 15. The inlet 18 is adapted to receive the alloy feedstock (shown in phantom) in a solid particulate, pelletized or chip form from a feed hopper 22. Preferably the feedstock is provided in the chip form and is of a size within the range of 5-18 mesh.

Please replace prior paragraph [0055] with the following amended paragraph:

[0055] The apparatus may also include a stationary platen 16 and moveable platen 11, each having respectively attached thereto a stationary mold half 19 and a moveable mold half 17. Mold halves include interior surfaces which combine to define a mold cavity 100 in the shape of the article being molded. Connecting the mold cavity to the nozzle 30 are a runner (which may be hot runners), gate and sprue, generally designated at 102. Operation of the mold ~~16~~ halves 17, 19 is otherwise conventional and therefore is not being described in greater detail herein.

Please replace prior paragraph [0057] with the following amended paragraph:

[0057] During operation of the apparatus 10, the induction coils 23 are turned on to thoroughly heat the barrel 12 and the screw 26 to the proper temperature or temperature profile along its length. Additionally, the band or resistance heaters 24 are also turned on. Generally, for forming thin section parts, a high temperature profile is desired, for forming mixed thin and thick section parts a medium temperature profile is desired and for forming thick section parts a low temperature profile is desired. Once thoroughly heated, the system controller 34 then actuates the drive mechanism 40 of the feeder 38 causing the auger within the feeder 38 to rotate. This auger conveys the feedstock from the feed hopper 22 to the feed throat 42 and into the barrel 12 through its inlet 18. If desired, preheating of the feedstock is performed in either the feed hopper 22, feeder 38 or feed throat 42 ~~indicated at 74~~.

Please replace prior paragraph [0066] with the following amended paragraph:

[0066] The chart of Figure 7 shows a comparative of the benefits of low frequency inductive heating over ceramic band heaters with barrel and liner stresses, including longitudinal, radial, hoop and Von Mises stresses, during preheating. Similarly, the chart of Figure 8 shows a comparison of the benefits of low frequency inductive heating on a particle size.

Please replace prior paragraph [0067] with the following amended paragraph:

[0067] In another embodiment seen in Figure 9, the apparatus 100 is a two stage machine having a first stage ~~102~~ 103, where the alloy is initially processed and a second stage 104, where the processed alloy is caused to be forced into a mold.

Since various components of the apparatus 100 of the second embodiment are the same as those in the prior embodiment, only the first and second stages ~~102~~ 103, 104 need be and are illustrated in Figure 9.

Please replace prior paragraph [0068] with the following amended paragraph:

[0068] The first stage ~~102~~ 103 generally include the barrel 106 within which is located a screw 108 is rotated by an appropriate drive mechanism so as to impart shear to the feedstock received into the barrel ~~102~~ 106 through the inlet 110. Located along the length of the barrel 106 are a series of inductive coils 112. As discussed in connection with the prior embodiment, the inductive coils 112 induce heating of the barrel 106, screw 108 and the feedstock. The action of the ~~sheering~~ shearing and the imparting of heat to the feedstock results in the feedstock being processed into a molten or semisolid state, or alternatively, a full liquid state. Continued rotation of the screw 108, longitudinally moves the material through the barrel 106 away from the inlet 110.

Please replace prior paragraph [0069] with the following amended paragraph:

[0069] The processed material is transferred from the first stage ~~102~~ 103 through a transfer coupling 114 to the second stage 104. The transfer coupling 114 includes a passageway defined therethrough which may be lined by a liner 116 and which terminates at a valve 118. Additionally, resistance or ceramic band heaters 120 are placed about the length of the transfer coupling 114.

Please replace prior paragraph [0070] with the following amended paragraph:

[0070] While illustrated in Figure 9 as having a parallel barrel 106 and shot sleeve ~~112~~ 122 arrangement, it is noted that orientation of the barrel 106 may be non-parallel to the shot sleeve ~~112~~ 122. Additionally, the feedstock may be gravitationally fed through the barrel 106 and may be sheared by mechanisms other than a screw 108, such as by paddles, a tortuous path or a non-contact electro-magnetic method or other method.

Please replace prior paragraph [0071] with the following amended paragraph:

[0071] The second stage 104 includes a second barrel or shot sleeve ~~112~~ 122 (which may also be lined) within which is disposed a piston or plunger 124. This second stage 104 may further, but not necessarily, include additional heaters 120 to provide heat input so as to maintain the processed material at the appropriate temperature once it has been received into the passageway 126 of the shot sleeve 122. Upon the appropriate amount of material being received into the passageway 126 of the second stage 104, an actuation mechanism 128 coupled to the plunger 124 is advanced. Upon advancement of the plunger 124, the material is forced out of the shot sleeve 122, the valve 118 preventing back flow up through the transfer coupling 114, through a nozzle ~~130~~ and into the mold assembly (not shown).